

### Finishing

Alloy 518.0 is excellent for polished finishes. It takes anodizing very well, leaving a natural aluminum finish without discoloration. Chemical conversion coatings give excellent protection, better than that for Alloy 360.0. Electroplating characteristics are poor.

### Corrosion Resistance

The highest corrosive resistant characteristics of the die casting alloys are shown by 518.0. Furthermore, for severe environments, its excellent receptiveness to chemical conversion coatings gives it added protection, making it very popular for such applications.

### Thermal Treatment

#### Stress Relieving

To reduce internal stresses, heat at 350–500F for 4–6 hr. Cool in still air.

#### Annealing

To increase ductility, heat at 500–700F for 4–6 hr. Cool in furnace or still air.

Typical Tensile Properties of 518.0–F at Elevated Temperatures \*

Test Temp (°F)	Ultimate Strength (ksi)	Yield Strength (Set 0.2%) (ksi)	Elongation (% in 2 in.)
75	45	27	8.0
212	40	25	8.0
300	32	21	25.0
400	21	15	40.0
500	13	9	45.0
600	8.5	4.5	45.0
700	5	2.5	45.0

\* Lowest strengths during 10,000 hours of heating at test temperatures.

### ALLOY 520.2

(220)

SAND

#### Chemical Composition Limits<sup>(1)</sup>

											Other Elements	
Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Sn		Each	Total
0.15	0.20	0.20	0.10	9.6–10.6	—	—	0.10	0.20	—	0.05	0.05	0.15

#### Typical Mechanical Properties

Casting Process & Temper	Tension <sup>(1)</sup>			Shear	Compression	Hardness <sup>(1)</sup>	Fatigue
	Ultimate Strength (ksi)	Yield Strength (Set 0.2%) (ksi)	Elongation (% in 2 in.)	Shearing Strength (ksi)	Compressive <sup>(1)</sup> Yield Strength (Set 0.2%) (ksi)	Brinell (500 kg load on 10mm ball)	Endurance Limit <sup>(1)</sup> (ksi)
Sand –T4	48	26	16.0	34	27	75	8

Requiring special foundry practice, Alloy 520.2 is used principally for sand casting where excellent machinability, resistance to corrosion, and high strength and elongation are required. In strength and corrosion resistance it rates as one of the highest of all sand casting alloys. Parts which must be shock resistant as well as strong are often made from this alloy. It is not recommended for use at operating temperatures exceeding about 250F, however. Typical applications are in aircraft fittings, railway passenger car frames, truck and bus frame sections,

levers, brackets, and similar parts subjected to severe usage.

### Castability

The alloy has fair fluidity and resistance to hot cracking. Pressure tightness and solidification shrinkage tendency are poor. It has a high tendency to microporosity and sand reaction. To get completely sound castings, foundrymen must use the best foundry practices.

### Machinability

The machinability of 520.0 in the –T4 temper is excellent.

### Weldability

Resistance spot and seam welding are very good methods for welding this alloy. Arc welding produces good results; gas methods are fair. Brazing is not usually employed.

### Finishing

Excellent finishes are obtained on the alloy by mechanical polishing or anodizing. Chemical conversion coatings result in high protection. Electroplating gives fair results.

### Corrosion Resistance

The inherent corrosion resistant qualities of 520.0 are excellent. Additional protection may be provided by chemical conversion coatings which are received very well.

### Thermal Treatment

#### –T4 Solution Heat Treatment

Soak at 810F for 18 hr; quench in water at 150–212F for a controlled time of 10–20 sec.

Typical Tensile Properties of 520.0–T4 at Elevated Temperatures \*

Test Temp (°F)	Ultimate Strength (ksi)	Yield Strength (Set 0.2%) (ksi)	Elongation (% in 2 in.)
75	46	25	12.0
212	40	23	12.0
300	36	19	13.0
400	23	12	30.0
500	15	7	50.0
600	11	3.5	60.0
700	6.5	2	—

\* After prolonged heating at test temperatures.

### ALLOY 535.2

(Almag 35)

SAND, PERMANENT MOLD

#### Chemical Composition Limits<sup>(1)</sup>

											Other Elements	
Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Sn		Each	Total*
0.10	0.10	0.05	0.10–0.25	6.6–7.5	—	—	—	0.10–0.25	—	0.05	0.05	0.15

#### Typical Mechanical Properties

Casting Process & Temper	Tension <sup>(1)</sup>			Shear	Compression	Hardness <sup>(1)</sup>	Fatigue
	Ultimate Strength (ksi)	Yield Strength (Set 0.2%) (ksi)	Elongation (% in 2 in.)	Shearing Strength (ksi)	Compressive <sup>(1)</sup> Yield Strength (Set 0.2%) (ksi)	Brinell (500 kg load on 10mm ball)	Endurance Limit <sup>(1)</sup> (ksi)
Sand –F	40	20	13	27.45	35.5	70	10

\* William F. Jobbins, Inc. alloy

Alloy 535.2 is an aluminum-magnesium type alloy possessing a high and stable combination of strength, shock resistance, and ductility. It is ideally suited for parts in instruments and computing devices where dimensional stability is of major importance.

The fatigue failures of many castings produced from heat treated aluminum alloys have been traced to residual internal stresses caused by the quenching operation which follows the solution heat treatment. Heat treating also often causes warpage. Elimination of these two causes of casting defects as well as the expense of heat treating are attractive features of this alloy.

When heated in the as-cast condition to 450F, some silicon alloys are subject to a volume increase of 0.001 in./in. Although stress relief can be obtained by heat treatments, low physical properties often result from the annealing. Alloy 535.0, when heated to 700-800F for 5 hr and cooled in still air, becomes dimensionally stable and at the same time retains its full hardness, physical properties, and machinability. As the alloy does not require stress inducing solution heat treatments, it is often found that no stress relieving is needed, even in those parts calling for high dimensional stability.

In addition to the high ductility and tensile strength of 535.0, the Charpy impact is from 10 to 12 lbs which makes it very suitable for shock resistant applications. Brackets, C-clamps and machined parts needing strength, impellers, optical equipment, and similar applications requiring a high polish or anodized finish are typical uses.

In many cases the alloy has replaced gray iron and malleable iron because its use reduces weight without sacrificing strength.

#### Castability

The alloy has fair casting characteristics and attains its high physical and mechanical properties immediately upon casting. This fact is important, since most high strength aluminum alloys change their properties as a result of age hardening. These properties remain constant for 535.2 within the entire range of temperatures from -76F to +225F. The alloy shows excellent fluidity with no tendency toward hot tearing.

#### Machinability

The machinability of this alloy is considered excellent. Despite its high ductility there is little tool drag. Machining is possible immediately following casting. Because of its high dimensional stability due to the almost complete absence of precipitation, dimensional tolerances are maintained up to 250F. At higher temperatures the growth is less than 1/3 that of Alloy 356.0, for instance. An excellent surface finish is produced, especially when machined with carbide tools at maximum speeds.

#### Weldability

Alloy 535.0 can be welded by any of the inert gas methods, shielded arc methods using filler material of 5356, 5183, or 1100 welding wire or rod, or clean scraps or cast pieces of 535.2. Fluxes generally should be avoided. Consequently, fusion welding processes requiring fluxes are not recommended.

#### Finishing

Because of this alloy's high resistance to corrosion, castings produced from it will not require any further surface treatment for most applications. However, it can be satin-anodized or chrome-plated for additional corrosion protection. It can also be anodized in a wide variety of colors. Lack of silicon in the alloy gives highly satisfactory coloration.

#### Corrosion Resistance

Because of the almost complete absence of heavy metals, the corrosion resistance of 535.0 is extremely high. In addition, the relatively high content of magnesium gives it further protection against corrosion from mild alkalis or salt spray.

#### Thermal Treatment

##### Stress Relieving for Dimensional Stability

Heat 535.0 castings to 700-800F for 5 hr. Cool in still air.

Typical Tensile Properties at Elevated Temperatures

Test Temperature (° F)	Tensile Strength (ksi)	Elongation (% in 2 in.)
300	37.8	11.3
350	34.4	13.8
400	32.3	14.0
500	26.7	12.9
600	20.75	13.0
700	15.35	12.0

#### ALLOY A712.1

(A612)

SAND.

##### Chemical Composition Limits<sup>(1)</sup>

										Other Elements		
Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti		Sn	Each	Total
0.15	0.40	0.35-0.65	0.05	0.65-0.8	—	—	6.0-7.0	0.25		—	0.05	0.15

##### Typical Mechanical Properties

Casting Process & Temper	Tension <sup>(2)</sup>			Shear	Compression	Hardness <sup>(2)</sup>	Fatigue
	Ultimate Strength (ksi)	Yield Strength (Set 0.2%) (ksi)	Elongation (% in 2 in.)	Shearing Strength (ksi)	Compressive <sup>(2)</sup> Yield Strength (Set 0.2%) (ksi)	Brinell (500 kg load on 10mm ball)	Endurance Limit <sup>(2)</sup> (ksi)
Sand - F	35 *	25 *	5.0 *	26	25	75 *	8

\* Tests made 30 days after casting.

This self-aging alloy is used regularly for miscellaneous general purpose castings which require subsequent brazing. It has high strength and ductility without heat treatment, although ductility is reduced on room temperature aging.

#### Castability

This alloy shows fair castability with greater shrinkage tendencies than shown by aluminum-copper alloys. Pressure tightness is good, but resistance to hot cracking is poor.

### Machinability

After heat treatment, notably in the T6 condition, Alloy 356.0 has good machinability. Because of the high silicon content, savings can be realized by using carbide-tipped cutting tools. Rakes should be positive and high. Speeds should approach the maximum and light cuts should be taken.

### Weldability

Very good welding characteristics are shown by Alloy 356.0 for all standard welding methods.

### Finishing

Alloy 356.0 has good polishing characteristics. It is excellent for electroplating and very good for chemical conversion coatings. Anodizing appearance is very good; the color is gray.

### Corrosion Resistance

Excellent resistance to corrosion is shown by Alloy 356.0. Its corrosion resistance is somewhat higher than that of 355.0. Chemical conversion coatings give further protection.

### Thermal Treatment

#### Sand & Perm. Mold - F Annealing

To relieve stresses and reduce growth, heat at 650F for 2 hr. Air cool to room temperature.

#### Sand & Perm. Mold - T51 Precipitation Treatment

Heat at 440F for 7-9 hr.

#### Sand - T6 Solution Heat Treatment and Precipitation

Soak at 1000F for 12 hr; quench in hot water (150-212F). Age at 310F for 3-5 hr.

#### Sand - T7 Solution Heat Treatment and Stabilization

Soak at 1000F for 12 hr; quench in hot water (150-212F). Age to relieve stresses at 400F for 3-5 hr.

#### Sand - T71 Solution Heat Treatment and Stabilization

Soak at 1000F for 12 hr; quench in hot water (150-212F). Age to relieve stresses for 2.4 hr at 475F.

#### Perm. Mold - T6 Solution Heat Treatment and Precipitation

Soak at 1000F for 4-12 hrs; quench in hot water (150-212F). Age at 310F for 2-5 hr.

#### Perm. Mold - T7 Solution Heat Treatment and Stabilization

Soak at 1000F for 4-12 hr; quench in hot water (150-212F). Age to relieve stresses for 7-9 hr at 440F.

Test Temp (°F)	Ultimate Strength (ksi)	Yield Strength (Set 0.2%) (ksi)	Elongation (% in 2 in.)
Sand 356.0 -T6			
75	33	24	3.5
212	32	24	4.0
300	23	20	6.0
400	12	8.5	18.0
500	7.5	5	35.0
600	4	3	60.0
700	2.5	2	80.0
Sand 356.0 -T7			
75	34	30	2.0
212	30	28	2.0
300	23	20	6.0
400	12	8.5	18.0
500	7.5	5	35.0
600	4	3	60.0
700	2.5	2	80.0
Perm. Mold 356.0 -T6			
75	38	27	5.0
212	30	25	6.0
300	21	17	10.0
400	12	8.5	30.0
500	7.5	5	55.0
600	4	3	70.0
700	2.5	2	80.0
Perm. Mold 356.0 -T7			
75	32	24	6.0
212	27	23	10.0
300	21	17	20.0
400	12	8.5	40.0
500	7	5	55.0
600	4	3	70.0
700	2.5	2	80.0

\* Lowest strengths during 10,000 hours of heating at test temperatures.

## ALLOY A356.2

(A356)

### SAND, PERMANENT MOLD Chemical Composition Limits<sup>(1)</sup>

Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Other Elements		
6.5-7.5	0.12	0.10	0.05	0.30-0.40	—	—	0.05	0.20	Sn	Each 0.05	Total 0.15

### Typical Mechanical Properties

Casting Process & Temper	Tension <sup>(2)</sup>			Shear	Compression	Hardness <sup>(3)</sup>	Fatigue
	Ultimate Strength (ksi)	Yield Strength (Set 0.2%) (ksi)	Elongation (% in 2 in.)				
Sand - F	23	12	6.0	—	—	—	—
Sand - T51	26	18	3.0	—	—	—	—
Sand - T6	40	30	6.0	—	—	—	—
Sand - T71	30	20	3.0	—	—	75	—
P.M. - F	27	13	8.0	—	—	—	—
P.M. - T51	29	20	5.0	—	—	—	—
P.M. - T6	41	30	12.0	—	—	80	—
P.M. - T61	41	30	10.0	28	32	90	13

Alloy 356.2 has greater elongation, higher strength, and considerably higher ductility than 356.2. These improved mechanical properties are obtainable because impurities are lower in A356.2 than in 356.2. Typical applications are airframe castings, machine parts, truck chassis parts, aircraft and missile components, and structural parts requiring high strength.

#### Castability

All casting characteristics are excellent for this alloy.

#### Machinability

The alloy has good machinability. Abrasiveness can be overcome and high tool wear can be minimized by using sharp, carbide-tipped tools with high rakes and clearances. Moderate to fast speeds are recommended.

#### Weldability

All common welding methods are excellent for joining this alloy. Brazing is seldom practiced.

#### Finishing

Electroplated finishes are very good. Chemical conversion coatings give very good protection, but anodized appearance is only fair. Mechanical finishes on A356.0 are good.

#### Corrosion Resistance

This alloy has very good resistance to most common forms of corrosion.

### Thermal Treatment

#### Sand & Perm. Mold - F Annealing

To relieve stresses and reduce growth, heat at 650F for 2 hr, air cool to room temperature.

#### Sand - T6 Solution Heat Treatment and Precipitation

Soak at 1000F for 12 hr; quench in hot water (150-212F). Age at room temperature for 8+ hr, then at 310F for 2-5 hr.

#### Perm. Mold - T6 Solution Heat Treatment and Precipitation

Soak at 1000F for 6-12 hr; quench in hot water (150-212F). Age at room temperature for 8+ hr, then at 310F for 3-5 hr.

#### Perm. Mold - T61 Solution Heat Treatment and Precipitation

Soak at 1000F for 6-12 hr; quench in hot water (150-212F). Age at room temperature for 6-12 hr, then at 310F for 10-12 hr.

#### Sand & Perm. Mold - T7 Solution Heat Treatment and Stabilization

Soak at 1000F for 12 hr; quench in hot water (150-212F). Age at room temperature for 8+ hr, then at 440F for 8 hr.

#### Sand - T71 Solution Heat Treatment and Stabilization

Soak at 1000F for 12 hr; quench in hot water (150-212F). Age at room temperature for 8+ hr, then at 475F for 3 hr.

The characteristics and uses of this alloy are similar to those of 356.2. However, 357.1 exhibits greater ultimate and yield strengths. This alloy shows high strength and good ductility after heat treatment. Applications include highly stressed aircraft and missile structures and high velocity blowers and impellers.

Typical Tensile Properties of Perm. Mold A356.0-T61 at Elevated Temperatures \*

Test Temp (° F)	Ultimate Strength (ksi)	Yield Strength (Set 0.2%) (ksi)	Elongation (% in 2 in.)
75	41	30	10.0
300	21 <sup>†</sup>	17	20.0
400	12	8.5	40.0
500	7.5	5	55.0
600	4	3	70.0
700	2.5	2	80.0

\* Lowest strengths during 10,000 hours of heating at test temperatures.

### ALLOY 357.1

(357)

SAND, PERMANENT MOLD  
Chemical Composition Limits<sup>(1)</sup>

										Other Elements		
Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Sn	Each	Total	
6.5-7.5	0.12	0.05	0.03	0.45-0.6	—	—	0.05	0.20	—	0.05	0.15	

#### Typical Mechanical Properties

Casting Process & Temper	Tension <sup>(1)</sup>			Shear	Compression	Hardness <sup>(2)</sup>	Fatigue
	Ultimate Strength (ksi)	Yield Strength (Set 0.2%) (ksi)	Elongation (% in 2 in.)				
Sand -F	25	13	5.0	—	—	—	—
Sand -T51	26	17	3.0	—	—	—	—
Sand -T6	50	43	2.0	—	—	90	—
Sand -T7	40	34	3.0	—	—	60	—
P.M. -F	28	15	6.0	—	—	—	—
P.M. -T51	29	21	4.0	—	—	—	—
P.M. -T6	52	43	5.0	—	—	100	—
P.M. -T7	38	30	5.0	—	—	70	—

#### Castability

It has excellent pressure tightness, fluidity, and resistance to hot cracking. Solidification shrinkage tendency is slight.

#### Machinability

Machining of 357.0 is good. However, like all high silicon alloys, there is appreciable abrasive action on the cutting tools. Carbide-tipped tools give best results.

#### Weldability

The weldability rating for 357.0 is considered excellent for all standard methods including gas, arc, and resistance. Brazing is not recommended.

#### Finishing

Polished finishes on 357.0 are considered good. Anodized appearance is fair. Electroplated finishes are excellent.



DART AERO ACCESSORIES INC  
PO Box 23003 CDO  
Victoria International Airport  
Sidney, BC, V8L 5N7  
CANADA

Tel: 604 656 2262  
Fax: 604 656 2993

**FAXED TELEFAX**  
1994 October 20

Date :

Page: 1 of 1

To: Alpine Non Ferrous

Attention: Malcom Taylor

Fax Number : 1 604 596 8045

From : Brad Williams

Subject : part D2265 step mount casting

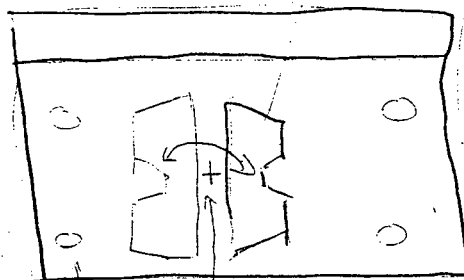
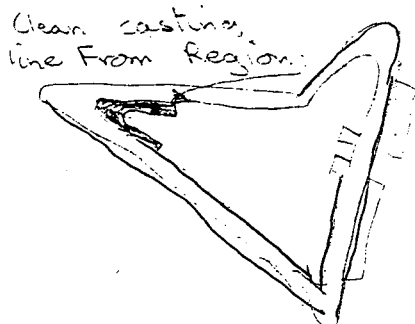
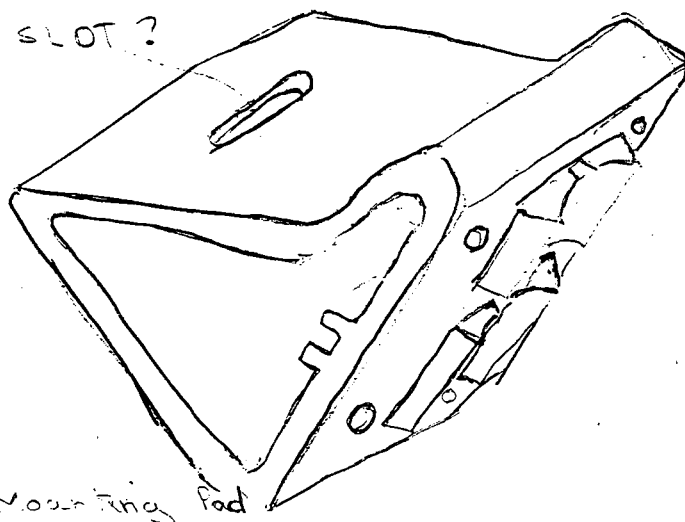
Malcom

The casting line has to be cleaned in the area indicated in the drawing. Also how difficult would it be to modify the casting to add the slot, four holes and allow the mounting pad to be rotated. These modifications will be for the next batch of castings.

The groove in the center of the mounting pad is for clearance. This could be modified if it makes the casting difficult. Please give myself or Jim a call about the casting changes  
Thanks

Brad Williams

ADD SLOT?



add  
holes?

rotate about  
center?

**DART**

1/2

---

## Facsimile Cover Sheet

**To:** Malcolm Taylor  
**Company:** Alpine  
**Phone:**  
**Fax:** 1 596 8045

**From:** Mike Cohen  
**Company:** Dart Aero  
**Phone:** 655 1677  
**Fax:** 655 1371

**Date:** Aug 18, 1994  
**Pages including this** 2  
**cover page:**

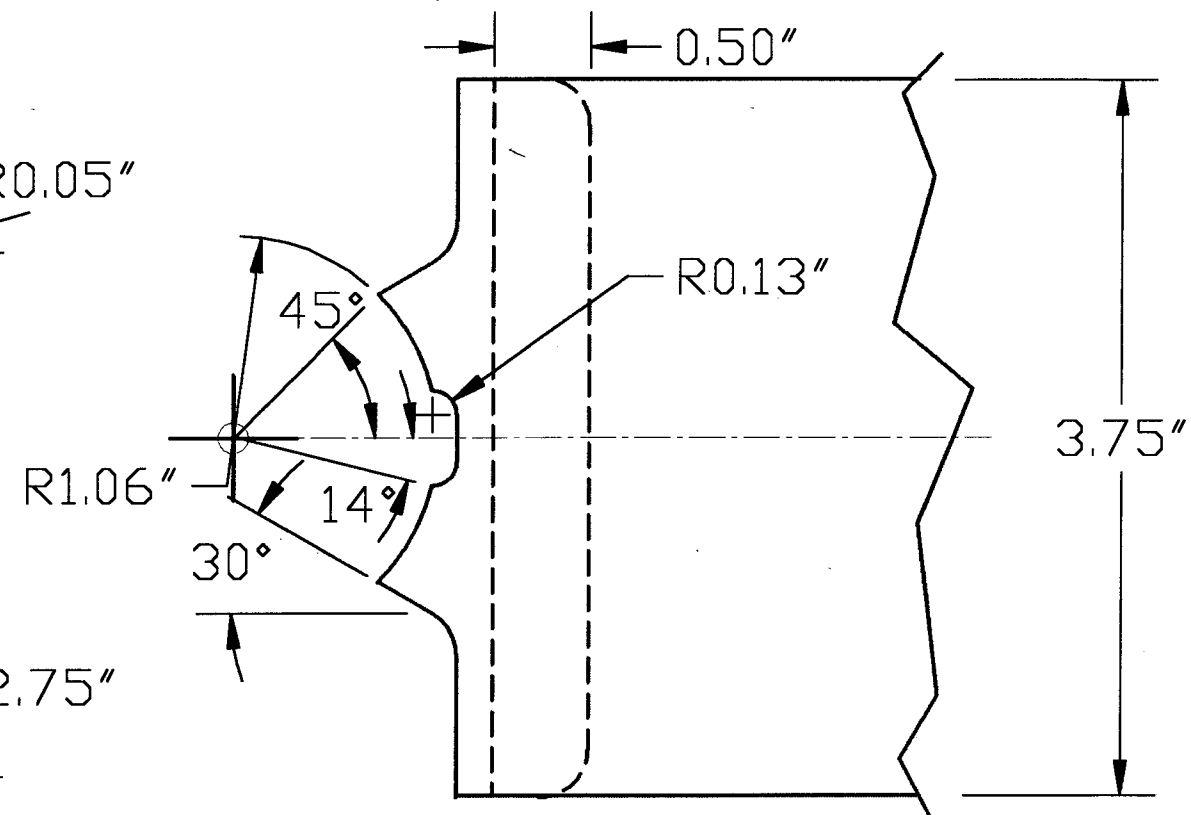
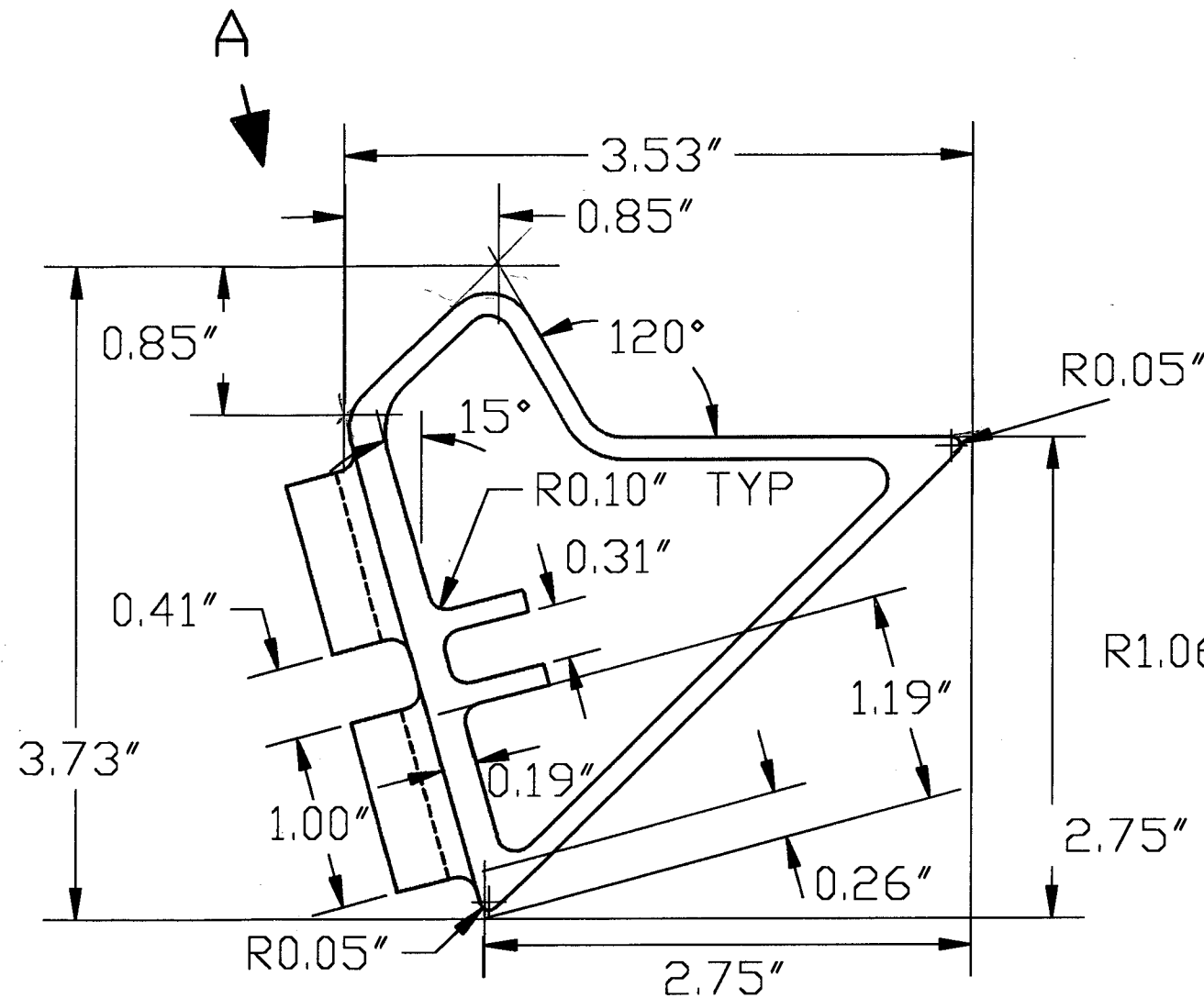
### Comments: Casting Proposal

The bracket - design that has been faxed to you is being proposed for cast manufacture. Please take a look at this bracket design from a casting perspective and provide comments -- ie: are any of the dimensions too tight? -- will the addition of the internal flanges shown, add substantially to the cost / complexity? -- etc...

The design is still preliminary and can be modified at your suggestion.

Please give me a call regarding this. Thanks,

*ML*  
—



UNDIMENSIONED OUTER RADII 0.375"  
 UNDIMENSIONED INNER RADII 0.25"  
 UNDIMENSIONED WALL THICKNESSES 0.125"  
 (UNDIMENSIONED DIMENSIONS ARE NON-CRITICAL)

VIEW A

# ALPINE

Non-Ferrous Foundry of Canada Ltd.

8607 - 11201 STREET, SURREY, B.C. V3W 4P1  
FOUNDRY: 596-0000 OFFICE: 596-6411 FAX: 596-8045

TO DART ACRA ACCESSORIES  
- INC

MARCH 16/93  
534-2026

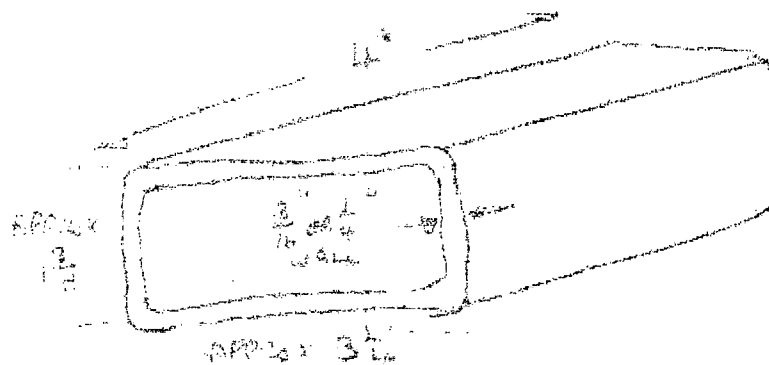
ATTN: JIM BRADLEY

Dear Sir,

WE ARE PLEASED TO QUOTE ON THE FOLLOWING

200 PARTS

AS A SKETCH



APPROX

APPROX

EACH

PART

4.90

ATTENTION

FOR

ABOVE

IS UP

TO COVER

Box

ONE TIME COST 1300<sup>00</sup>

WILL BE GIVEN PRICES FOR ABOVE, OR DRG.

DELIVERY 3 WEEKS

TAXES EXTRA IF APPLICABLE,

PLEASE ADVISE US

WE ARE PLEASED FOR THE OPPORTUNITY TO QUOTE

Yours

ALPINE

MAR 18 1993 11:25AM  
FAX: 596-8045

PHONE: 596-6411

TO



# ALPINE

1-ferrous Foundry of Canada d.

8657 - 132nd STREET, SURREY, B.C. V3W 4P1  
FOUNDRY: 596-8080 OFFICE: 596-6411 FAX: 596-8045

TO DART AERO ACCESSORIES  
INC

MARCH 10/93

ATT JIM BRADLEY

DEAR SIR

WE ARE PLEASED TO QUOTE ON THE FOLLOWING

100 PARTS AS PER YOUR DRG SUPPLIED  
FROM ALUM A 356

EACH 5.50 AS CAST

PATTERN SHALL TYPE WITH CORE BOX

ONE TIME 1850<sup>00</sup>xx. THIS IS AN  
ALUM LONG LIFE PATTERN, IF IT IS A  
JOB WITH NO MORE THAN 1000 PARTS A WOOD  
PATTERN WOULD COST 1300<sup>00</sup>xx WITH CORE BOX.

FOR 200 PARS CASTINGS THE COST  
PER PARS WOULD BE

EACH 4 <sup>80</sup>xx AS CAST

DELIVERY W/Pattern TWO WEEKS

PARTS 100 ONE WEEK

PARTS 200 - 500 2 WEEKS

TAXES EXTRA

FOB ALPINE FOUNDRY

THANK YOU FOR THE OPPORTUNITY TO QUOTE

REGARDS MALCOLM TAYLOR  
SALES

	<u>1500</u>	<u>100</u>	<u>200</u>	<u>500</u>	<u>Discovers</u>
Alpine (wood)	1300	5.50	4.80	4.80	3 wks
- (Aum)	1850	5.50	4.80	4.80	3 wks
Hassins	2085	5.60	5.60	4.85	4-6 wks
Pacific Marco	1890	7.15	6.95	6.30	4-6 wks
Globe	1440	6.50	6.50	6.30	
Foukwa	1550	12.00		10.50	3-4 + 1 wks

**DART**

DART AERO ACCESSORIES INC  
PO Box 23003 CDO  
Victoria International Airport  
Sidney, BC, V8L 5N7  
CANADA

Tel: 604 656 2262  
Fax: 604 656 2993

**TELEFAX**

Date : JULY 12/94

Page: 1 of 3

To: ALPINE Foundry

Attention: MALCOLM

Fax Number : 1-596-8045

From : Jim Bradley

Subject : D2247 & D2248

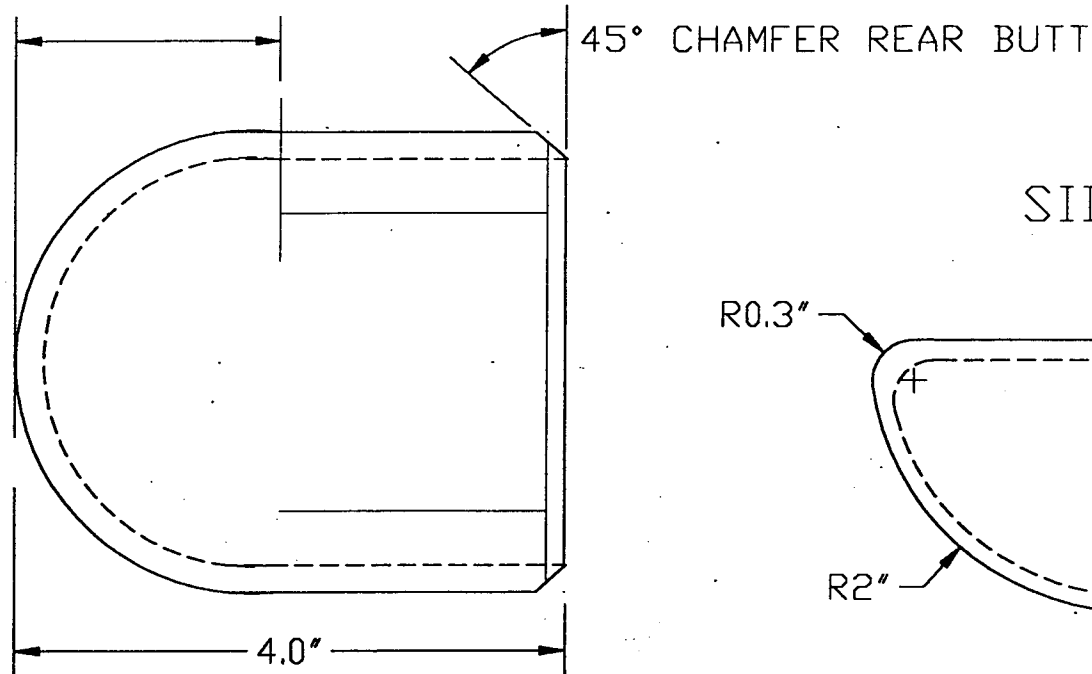
350  
STEP  
FILE

PLEASE QUOTE PRICE AND DELIVERY OF  
THE ATTACHED CASTINGS IN A356 ALUM.  
PRICE SHOULD INCLUDE PATTERNS, BOXES, ETC.  
QTY WILL BE 100 X D2247 AND 200 X D2248  
PER ORDER.

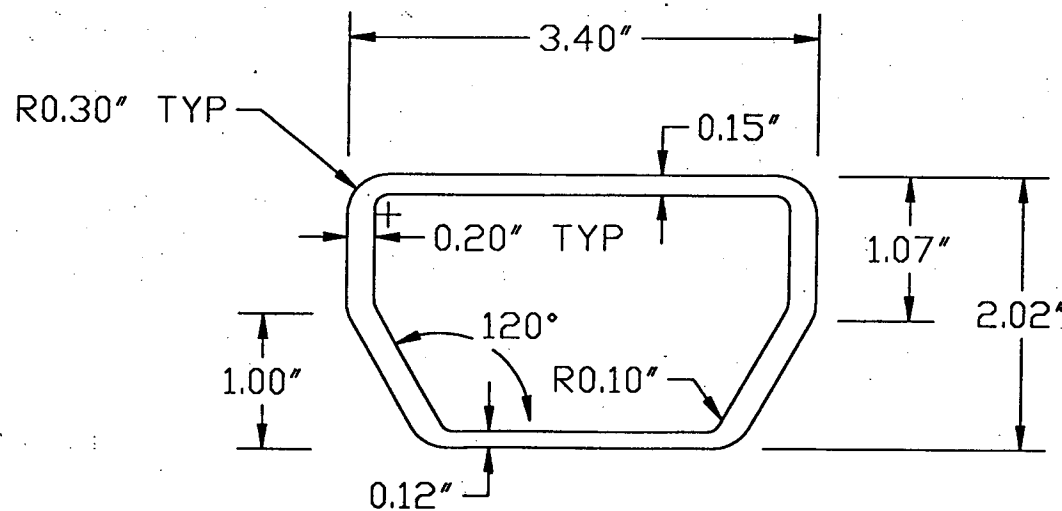
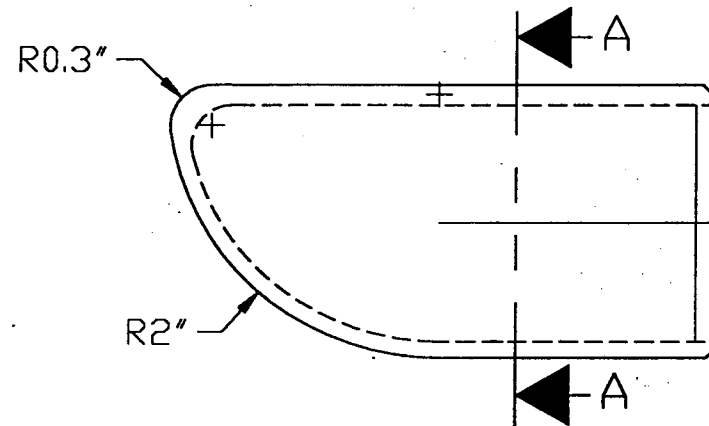
PLEASE CALL ME ON 480-8173

# BOTTOM VIEW

2" BLEND TO ROUND



# SIDE VIEW



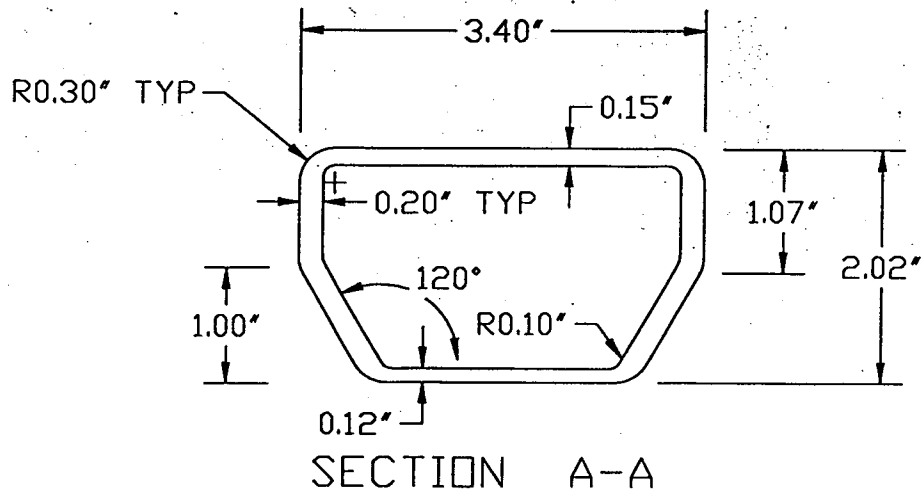
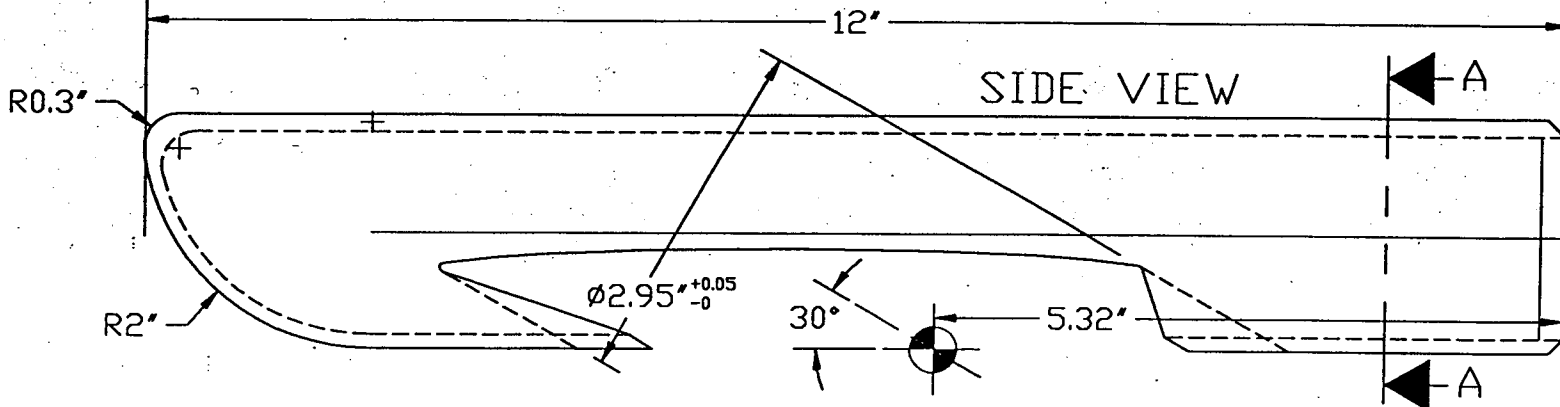
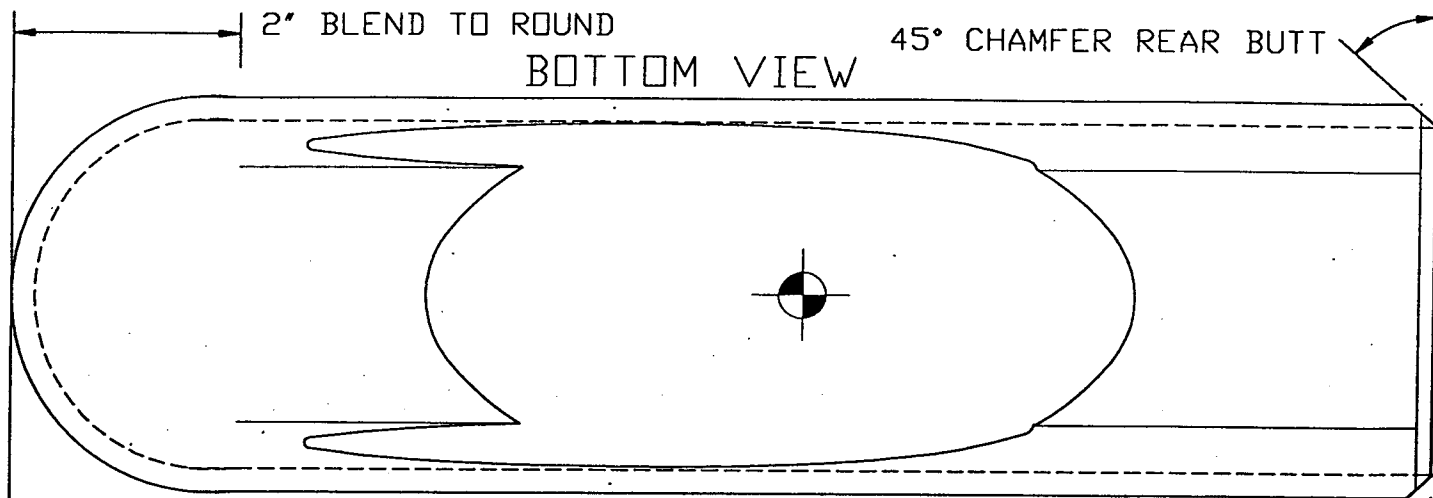
# SECTION A-A

**DART**

DRAWN	DAF	DAF	REV. B
DESIGN	MA	VICTORIA INTERNATIONAL AIRPORT, CANADA	
	MA	DRAWING NO.	
		D2248	
		TITLE	
		CASTING, STEP, REAR	
		SHEET 1 OF 1	

**DART**

DRAWN	DESIGN	DRAWING NO.	REV
	<i>W. C. Allen</i>		<i>B</i>
	<i>W. C. Allen</i>	D2247	
	TITLE	SHEET 1 OF 1	
	CASTING, STEP, FWD		
D, AERO ACCESSORIES INC	VICTORIA INTERNATIONAL AIRPORT, CANADA		



## ALPINE

Non-Ferrous Foundry of Canada Ltd.

8657 - 132nd STREET, SURREY, B.C. V3W 4P1

FOUNDRY: 596-8080 OFFICE: 596-6411 FAX: 596-8045

TO DART AERO

ATT JIM BRADLEY

JULY 13<sup>th</sup> 94

FAX 1-656 2993

1-655-1371

WE ARE PLEASED TO QUOTE ON THE FOLLOWING

200 CASTING STEP REAR D2248  
IN ALUM-356COST EACH 6<sup>50</sup> AS CASTED  
PATTERN AND SHELL CORE BOX  
ONE TIME TOTAL 2585<sup>00</sup>100 CASTING STEP FWD D2247  
IN ALUM-356COST EACH 18<sup>50</sup> AS CASTED  
PATTERN AND SHELL CORE BOX  
ONE TIME TOTAL 2800<sup>00</sup>

DELIVERY PATTERNS 2-3 WEEKS

CASTINGS 1-2 WEEKS

TAXES EXTRA

F.O.B. ALPINE FOUNDRY

THANK YOU FOR THE OPPORTUNITY TO  
QUOTEREGARDS  
MALCOLM TAYLOR  
SALES

PHONE NO. : 5968045

JUL. 22, 1994 3:28PM P. 2

PHONE NO. : 16562993

FROM : ALPINE FOUNDRY

TO :

JUL. 22, 1994 3:27PM P. 1

PHONE NO. : 16562993

TO :

TOTAL P.01

**DART**

## Facsimile Cover Sheet

To: Malcolm Taylor  
Company: Alpine Foundry  
Phone:  
Fax: 596 8045

From: Michael Cohen  
Company: Dart Aero Acc.  
Phone: 655 1677  
Fax: 655 1371

Date: Aug 5/94  
Pages including this  
cover page: 2

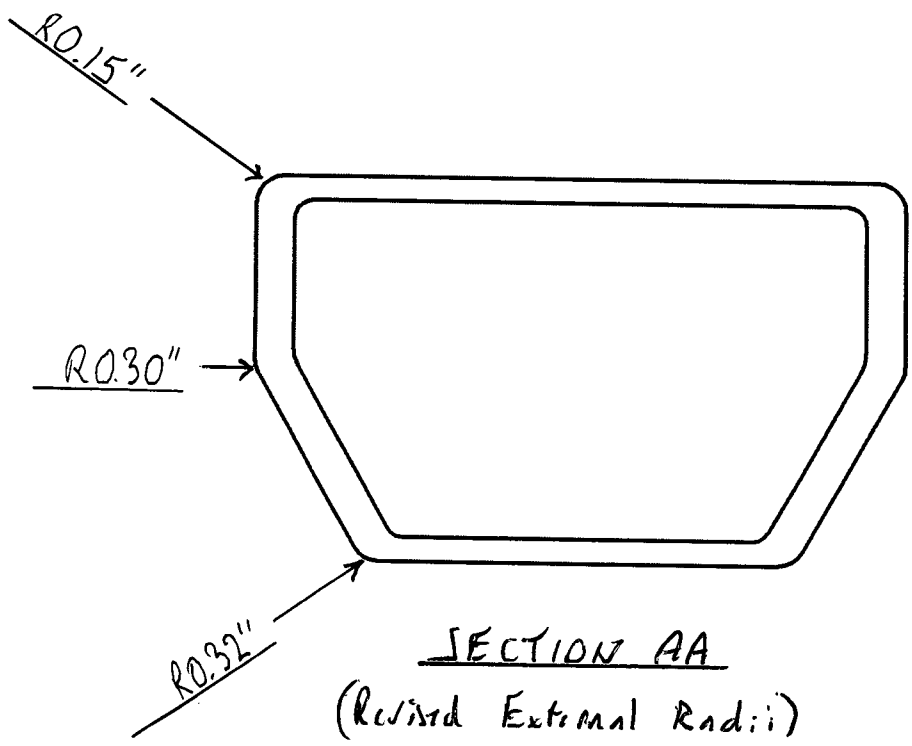
### Comments:

Malcolm:

In the Dart Casting drawings which we've recently sent you (Dart drawing no. 5 D2247 and D2248), can you change the external radii to reflect the following information: [Shown on page 2 is the revised casting section AA of these drawings] Thanks, MC



DRAWN	DA AERO ACCESSORIES INC VICTORIA INTERNATIONAL AIRPORT, CANADA	
DESIGN	DRAWING NO.	REV.
	SHEET 2 OF 2	
	TITLE	







DRAWN	<b>DA<sup>+</sup> AERO ACCESSORIES INC</b> VICTORIA INTERNATIONAL AIRPORT, CANADA	
DESIGN	DRAWING NO.	REV.
	SHEET <u>2</u> OF <u>2</u>	
	TITLE	

